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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/697,101 | 10/31/2003 | Ashok B. Nayak | 036263-018 | 8993 |

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EXAMINER

CHEN, TIANJIE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2652

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,101

Applicant(s)

NAYAK ET AL.

Examiner

Tianjie Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Final Rejection

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 2, 3 11, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Todd et al (US 6,252,739).

Claim 2. Todd et al shows a tape drive head cleaner for a tape drive in Figs. 4-7 having a magnetic read/write head 10 (Column 3, line 32), the head cleaner including: a brush carriage 40 (Column 3, line 62); a brush 24 (Column 3, line 51) mounted on the brush carriage; and a brush carriage movement mechanism (Fig. 4) coupled to the brush cartridge for moving the brush carriage to cause the brush to sweep along the length of the read/write head along a first upward direction (Column 4, lines 58-61) and a second downward opposite direction (Column 5, line 11-19) in a cleaning cycle.

Claim 3, Todd et al shows that the read/write head has longitudinal grooves (gutters) 11 (Column 4, lines 33-34), and the brush 24 has bristles (Fig. 4), and wherein the brush cartridge movement mechanism is configured to move the brush carriage so as to cause the brush bristles to enter the grooves and move the brush in the direction of the grooves (Column 4, lines 50-57).

Claim 11, as described above, Todd et al shows a tape drive including: a write/read head having grooves extending along a first axis (vertical direction, column 4, line 41); a brush; and a brush carriage on which the brush is mounted, the brush

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cartridge controllably movable to sweep the brush on the write/read head along the first axis along a first direction and a second opposite direction in a cleaning cycle.

16. The tape drive of claim 11, further including a stepper motor and a gear train operatively coupled between the stepper motor and a lead screw, with the stepper motor operable to rotate the lead screw to move the brush up and down in steps along the first axis.

Claim 21, as described above, Todd et al shows a tape drive head cleaner for use with a magnetic read/write head, the read/write head oriented along a first axis: a cleaning element adapted to come into contact with and clean the magnetic read/write head in a first direction and a second opposite direction in a cleaning cycle; and a movement mechanism coupled to the cleaning element and to move the cleaning element, wherein the movement mechanism moves the cleaning element along the first axis when moving the cleaning element in the first and second directions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4, 12, 13, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd et al in view of Davis (US 6,867,947).

Claim 4, Davis shows a head cleaner in Fig. 1, wherein an actuator 82 coupled to the read/write head 80, the actuator controllable to move (oscillate) the read/write head for cleaning the head (Column 4, lines 29-31). Since Davis teaches vertically

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oscillation of the head can be used for cleaning the head. One of ordinary skill in the art would have been motivated to add the oscillation to the head for better cleaning the head. In such constructed device, the actuator controllable to move the read/write head during movement of the brush cartridge.

Claim 12, as described above, Davis shows a write/read head actuator configured to move the write/read head on the first axis.

Claim 13, in the above constructed device, the write/read head actuator is further configured to move the write/read head along the first axis simultaneously with the sweep of the brush on the write/read head.

Claim 16, in the above constructed device, Nayak shows a stepper motor 40 and gear train 42 (Fig. 7) coupled between the stepper motor and the lead screw 20 , with the stepper motor operable to rotate the lead screw to move the brush up and down in steps along the first axis.

Claim 18, in above constructed device, the stepper motor is controllable to move the brush from a reference position above a first axial end of the write/read head to a position below a second axial end of the write/read head (Todd et al's Figs. 4 and 7).

Claim 19, in above constructed device, the brush is arranged on the brush carriage such that bristles of the brush enter the grooves of the write/read head when the brush sweeps on the write/read head and exit the grooves when the brush is moved to the reference position and to the position below the second axial end of the write/read head.

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3. Claims 5, 6, 10, 14, 15, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd et al in view of Nayak (US 6,697,230) and Townsend (US 4,139,877).

Claims 5 and 6, Nayak shows a device for moving a element up and down. Nayak teaches that this system provides proper isolation of the guidance system from errors and allows the element moving with a desired velocity (Column 2, lines 31-34). One of ordinary skill in the art would have been motivated to replace the moving system (drum 22 and not shown driving mechanism) with the structure taught by Nayak for isolating error and obtaining desired velocity.

In the above constructed device, the brush carriage movement mechanism includes a lead screw 20 (Fig. 1; column 4, line 21) and a nut 30 (Fig. 4) on the brush carriage, the nut engaging the lead screw 20 such that rotation of the lead screw drives the brush carriage vertically along the lead screw; and the brush carriage movement mechanism further comprises a stepper motor 40 (Column 3, line 66) coupled to the lead screw to control the rotation of the lead screw.

Nayak does not show that the nut is a half-nut.

Townsend shows a half nut 54 (Figs. 5 and 6; column 4, line 36) and teaches that using a half-nut would avoid tooth wedge binding lock with teeth of the lead screw and permit detachment and replacement (Column 4, lines 39-43). One of ordinary skill in the art would have been motivated to use half-nut for avoiding lock and permitting detachment and replacement.

Claim 14, the above constructed device includes a lead screw and a half nut on the brush cartridge and carried by the lead screw rotation of the lead screw during the brush carriage along the lead screw.

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Claim 15, in the above constructed device, a longitudinal axis of the lead screw is parallel to the first axis such that the brush cartridge is moved along a second axis parallel to the first axis and the brush is moved along the first axis.

Claims 10 and 20, Nayak shows the brush carriage movement mechanism further includes guide shafts 16 and 18 (Fig. 2) on which the brush carriage is mounted so as to be guided during movement of the brush cartridge in response to the rotation of a lead screw 22.

4. Claims 7-9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd et al in view of Nayak (US 6,697,230), Nanba (US 3,774,916).

Claims 7-8 and 17, Nanba shows a leading screw 58 is driven by a motor (Fig. 4; column 2, lines 67-68) a limit switch 71 (Fig. 4; column 3, lines 21-23) fixed in a position to detect a reference position of the moving member 65; including a controller (Fig.10) to control the motor to control movement of the spiral shaft 58 in relation to a reference position and cause the moving member sweep a predetermined distance.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to add the structure taught by Nanba into Todd et al's device. The rationale is as follows: Nanba shows a mechanism capable to determine the starting and ending points. This is also an old and notorious technique and commonly used. One of ordinary skill in the art would have been motivated to replace the driving mechanism with the structure to be able to drive the brush carriage.

Claim 9, Todd et al shows in Fig. 7 that the controller further controls the stepper motor to control movement of the brush carriage to cause the brush to sweep past a bottom edge of the read/write head.

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Response to Arguments

5. Applicant's arguments with respect to claim 2 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record in PTO-892 Form and not relied upon is considered pertinent to applicant's disclosure.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TIANJIE CHEN
PRIMARY EXAMINER